

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
20 January 2005 (20.01.2005)

PCT

(10) International Publication Number
WO 2005/005662 A2

(51) International Patent Classification⁷: C12Q 1/68

(21) International Application Number:
PCT/EP2004/007529

(22) International Filing Date: 8 July 2004 (08.07.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
03015400.9 8 July 2003 (08.07.2003) EP
60/485,462 8 July 2003 (08.07.2003) US

(71) Applicant (for all designated States except US): AXIO-
GENESIS AG [DE/DE]; Joseph-Stelzmann-Str. 50, 50931
Köln (DE).

(72) Inventors; and

(75) Inventors/Applicants (for US only): EHLICH, Andreas
[DE/DE]; Johannesweg 35, 53894 Mechernich (DE).
BOHLEN, Heribert [DE/DE]; Auerstrasse 4, 50733 Köln
(DE). SCHWENGBERG, Silke [DE/DE]; Dampfmüh-
lenstr. 107, 52355 Düren (DE).

(74) Agent: STEINECKE, Peter; Müller, Fottner, Steinecke,
P.O. Box 31 01 40, 80102 Munich (DE).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished
upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: SECRETED PROTEINS AS MARKERS FOR CELL DIFFERENTIATION

(57) Abstract: Provided are means and methods for in vitro and in vivo detection of chemically induced effects on embryonic development and differentiation for the purpose of embryotoxicity/teratogenicity screening as well as for the identification of pharmaceuticals such as growth and tissue promoting factors based on differentiating pluripotent embryonic stem (ES) cells. The assays are based on the use of transgenic ES cells and non-human animals comprising such ES cells or derivatives thereof, wherein said ES cells are characterized by the differentiation-dependent expression of a secreted reporter protein; in particular secreted embryonic alkaline phosphatase (SEAP).

WO 2005/005662 A2